

REMARKS

35 USC §112

Claims 1-43 are rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Applicant respectfully disagrees.

The term “fiber constituent” is defined in the specification on page 8 as:

“It should be understood that the first fiber constituent and the second fiber constituent may comprise any suitable monomer, polymer or moiety, as long as each individual or both combined constituents is capable of being used as a fiber material, especially in yarn products, fabric/textile products and/or carpet products.”

All monomers, polymers or moieties are not capable of being used as a fiber material or forming suitable and viable fiber materials, such as those found in yarn products, textiles, fabrics or carpets, and one of ordinary skill in the art of fibers and fabrics should understand which monomers, polymers or moieties are especially useful or suitable. It is the fiber constituents that interact with the gelling agent to form a “pre-fiber composition”. The pre-fiber composition may then be utilized in a fiber product. So, in summary, the “fiber constituent” is a monomer, polymer or moiety that is utilized to form a fiber.

The phrase “amide-based polymer” in the claims should actually be polyamide-based compound, as shown on page 9 of the specification. The claims are herein amended to reflect this correction.

35 USC §102

Claims 1-11 and 20-31 are rejected under 35 USC §102, as being anticipated by Windley (US 5,155,178). The Applicant respectfully disagrees.

Claim 1 of the present application recites:

“A pre-fiber composition, comprising:

a first fiber constituent having a first melting point;

a second fiber constituent having a second melting point; and

a gelling agent that solvates at least one of the first fiber constituent or the second fiber constituent, wherein the gelling agent significantly reduces co-polymerization of either of the constituents in the composition.”

Claim 20 of the present application recites:

“A fiber, comprising:

at least two polyamide-based compounds, each having a melting point, wherein the melting point of one polyamide-based compound is dissimilar to the melting point of a second polyamide-based compound; and

a gelling agent that is compatible with at least one of the polyamide-based compound, wherein the fiber comprises two differentiable melting points that are substantially similar to the melting points of each of the polyamide-based compound.”

Claim 21 of the present application recites:

“A method of producing a pre-fiber composition, comprising:
providing a first fiber constituent having a first melting point;
providing a second fiber constituent having a second melting point, wherein the first melting point and the second melting point are dissimilar;
providing at least one gelling agent that is compatible with at least one of the fiber constituents; and
mixing the first fiber constituent, the second fiber constituent and the at least one gelling agent such that there is sufficient viscosity and sufficient melt strength in the composition so that it can be spun into a fiber and such that the first melting point and the second melting point in the fiber are substantially similar to their original values before mixing.”

The Specification, on pages 12 and 13, describes a portion of the invention in this way:

“Once the pre-fiber composition/dispersion is formed, the composition/dispersion may be extruded through a suitable die or spinnerette for production of a “minority” fiber. **It should be understood that the resulting fiber will comprise the first fiber constituent having and retaining a first melting point (at or near its original melting point) and the second fiber constituent having and retaining a second melting point (at or near its original melting point), whereby co-polymerization between any or all of the constituents has been minimized and/or prevented entirely through the addition of the gelling agent.** The minority fiber may then be combined with a “host” fiber or bulked continuous filament (BCF) “host” fiber to create a carpet product that is softer than

conventional carpet products made with conventional low melt fiber comprising 100% low melt co-polymer and that comprises improved tips, surface and texture, as opposed to conventional carpet products made without the addition of low melt fibers. **These conventional melt-blended polymer fibers generally comprise significant and undesirable co-polymerization**, such that the melt point of the low melt polymer increases as the amount of the higher melt point polymer increases. **These fibers will not melt and bond at the temperature of the original low melt polymer and hence not effect the aesthetics of the resultant carpets if heat treated at the same temperature.**” (emphasis added).

The Windley reference, on the other hand, specifically teaches a copolymerization reaction between the nylon component and the polyamide component. In the Summary of the Invention section in Column 2, lines 18-30, Windley states: “The present invention relates to fiber-forming polyamide compositions comprising a first nylon polymer which is nylon 6, nylon 6,6 or nylon 6,6/6 copolymers prepared by copolymerizing the nylon polymer with a cationic dye modifier, which is sulfonated benzene dicarboxylic acid, or its salts or esters, which first nylon polymer is melt-blended with a polyamide containing 8 to 22 carbon atoms per amide link to form a block copolymer composition....” Based on the fact that the Windley reference teaches a copolymerization reaction and the present application teaches otherwise, the Windley reference cannot possibly anticipate the claims of the present application.

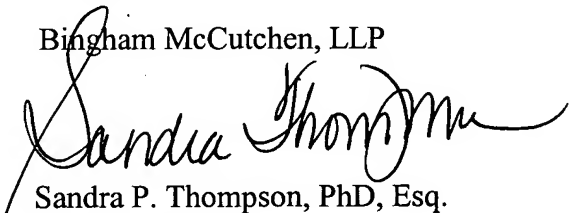
In addition, Windley does not teach all of the claimed elements of the present application. “Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.” *W. L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983) (citing *Soundsciber Corp. v. United States*, 360 F.2d 954, 148 USPQ 298, 301 (Ct. Cl.), *adopted*, 149 USPQ 640 (Ct. Cl. 1966)) Further, the prior art reference must disclose each element of the claimed invention “**arranged as in the claim**”. *Lindermann Maschinenfabrik GmbH*

v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)(citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)). Windley does not teach a pre-fiber composition/dispersion that is formed, where the composition/dispersion may be extruded through a suitable die or spinnerette for production of a “minority” fiber. **It should be understood that the resulting fiber will comprise the first fiber constituent having and retaining a first melting point (at or near its original melting point) and the second fiber constituent having and retaining a second melting point (at or near its original melting point), whereby co-polymerization between any or all of the constituents has been minimized and/or prevented entirely through the addition of the gelling agent.** Based on this argument, along with others such as that discussed above, Windley does not anticipate claim 1, 20 or 21 of the present application because Windley is lacking and/or missing at least one specific feature or structural recitation found in the present application, and in claim 1, 20 and 21. Claims 1, 20 and 21 are therefore allowable as not being anticipated by Windley. Further, Windley does not anticipate claims 2-11 and 23-31 of the present application by virtue of their dependency on claims 1, 20 or 21.

REQUEST FOR ALLOWANCE

Claims 1-43 are pending in this application, and the Applicant respectfully requests that the Examiner reconsider all of the claims in light of the arguments presented and allow all current and pending claims.

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Table 1

NYLON GEL SPINNING:				
RXT-2 UNIT				
CHANGE NUMBERS WHERE IT IS BLUE COLOR				
MINIMUM PUMP RPM	8			
MAXIMUM PUMP RPM	40			
PUMP SIZE (CC/REV.)	1.16			
NUMBER OF FILAMENTS	14			
PUMP SPEED (RPM)	19.7			
POLYMER DENSITY (GM/CC)	0.98			
THRU-PUT (LBS/HR)	2.95969			
THRU-PUT PER FIL (LBS/HR)	0.21141	THRU-PUT PER FIL (GMS/MIN)	1.5982	
THRU-PUT (GMS/MIN)	22.395	THRU-PUT (GMS/MIN)	22.395	
THRU-PUT PER FIL (GMS/MIN)	1.59964			
TAKE-UP SPEED (METER/MIN)	3000	FROM FT/MIN TO M/MIN	0.3048	
DPF GMS @TAKE-UP ROLL (UNDRAWN)	4.79892			
DTEX PER FIL GMS @TAKE-UP ROLL (UNDRAWN)	5.33213			
FIL DIAMETER, MICRONS (UNDRAWN)	22.1859			
FIL DIAMETER, mm (UNDRAWN)	0.02219			
TAKE-UP SPEED (FEET/MIN)	9842.52			
SPINNERETTE	DIAMETER	LENGTH	L/D	AREA
INCH	0.03	0.09	3	0.0007065
CM	0.0762	0.2286	3	0.00455806
YARN DENIER @TAKE-UP ROLL (GMS)	67.1849			
FLOW RATE (CC/MIN)	22.852			
JET VELOCITY (CM/MIN)	5013.54			
JET VELOCITY (METER/MIN)	50.1354	DR @ (TAKE-UP ROLL)		59.8379407
SPIN, CAPILLARY RADIUS (FT)	0.0025			
SPIN, CAPILLARY LENGTH (FT))	0.0075			
THRU-PUT PER FIL (LBm/HR)	0.21141			
DENSITY (LBm/FT3)	61.1814			
FLOW RATE (FT3/SEC.)	9.60E-07			
VISCOSITY (POISE)	3143.9			
VISCOSITY (LBf.SEC/FT2))	6.56634			
DELTA PRESSURE (PSI)	21.4101			
STACK DRAW (CALC. FROM SPRT HOLE DIA. AND FIL DIA.)	34.3462			
FINAL REQUIRE DENIER AFTER DRAWIN	10			
DRAWING DRAW RATIO	0.47989			

Table 2

<i>Table 2-1</i>	<i>Table 2-2</i>
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Table 3

<i>Table 3-1</i>	<i>Table 3-2</i>
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<i>Table 4-1</i>	<i>Table 4-2</i>
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*Table 4**Table 8*

<i>Table 8-1</i>	<i>Table 8-3</i>
<i>Table 8-2</i>	<i>Table 8-4</i>

Table 11

<i>Table 11-1</i>	<i>Table 11-2</i>	<i>Table 11-3</i>
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Table 2-1

Sample I.D.	Starting Conditions	#1	#2
POLYMER TYPE	MBM	MBM	
Feeder Setting	2.96	2.96	2.96
water on feeding zone	on	on	on
zone 1 Temp. (deg. c)	245	270	250
zone 2 Temp. (deg. c)	245	280	250
zone 3 Temp. (deg. c)	245	280	250
zone 4 Temp. (deg. c)	245	280	250
zone 5 Temp. (deg. c)	245	280	250
zone 6 Temp. (deg. c)	245	280	250
zone 7 Temp. (deg. c)	245	280	250
8 Connecting Plate Temp. (deg. c)	245	280	250
9 Block Temp. (deg. c)	245	280	250
10 Spin Pump Temp. (deg. c)	245	280	250
11 Top Cap (deg. c)	245	280	250
12 Spin Pack Temp. (deg. c)	245	280	250
Top Heated Sleeve Length (inches)	xxxx	xxxx	xxxx
Top Heated Sleeve Length (deg. c)	xxxx	xxxx	xxxx
Bottom Heated Sleeve Length (inches)	xxxx	xxxx	xxxx
Bottom Heated Sleeve Length (deg. c)	xxxx	xxxx	xxxx
Barrel Melt Temp (deg. c)	252	288	256
Melt Pump Inlet Pressure (psi)	????	420	10
Melt Pump Outlet Pressure (psi)	????	200	470
Extruder (rpm)	200	200	200
Spinneret: no. of holes / Shape	14 R	14 R	14 R
Spinneret: capillary diameter & depth	.024 x 0.072	.024 x 0.072	.024 x 0.072
Metering pump size (cc/rev)	1.16	1.16	1.16
Metering pump (rpm)	16.7	19.3	19.8
Thruput (lbs/hr)	2.97	2.97	2.97
Filter type	STD SCREEN	STD SCREEN	STD SCREEN
Monomer Exhaust Reading (inches water)	TBD	TBD	TBD
Quench air Flow rate (CF/M)	14.2	14.2	14.2
Quench air Temp (deg. c)	19	19	19
Quench air Humidity %	40.8	40.8	40.8
% Torque	70	70	
Nitrogen in Hoper	3	3	3
Need: polymer chips moisture	Yes		
Need: Free fall samples for FAV, COOH	Yes	Yes	Yes

Table 2-2

#3	#4	#5	#6	#7	#8
MBM 10% Lactam	MBM 10% Lactam	MBM 10% Lactam	MBM 10% Lactam	MBM 10% Lactam	MBM 10% Lactam
2.96	2.96	2.96	2.96	2.96	2.96
on	on	on	on	on	on
250	245	240	235	230	225
250	245	240	235	230	225
250	245	240	235	230	225
250	245	240	235	230	225
250	245	240	235	230	225
250	245	240	235	230	225
250	245	240	235	230	225
250	245	240	235	230	225
250	245	240	235	230	225
250	245	240	235	230	225
250	245	240	235	230	225
250	245	240	235	230	225
250	245	240	235	230	225
xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
257	251	246	240	235	231
200	10	10	10	10	10
250	250	310	260	360	400
200	200	200	200	200	200
14 R	14 R	14 R	14 R	14 R	14 R
.024 x 0.072	.024 x 0.072	.024 x 0.072	.024 x 0.072	.024 x 0.072	.024 x 0.072
1.16	1.16	1.16	1.16	1.16	1.16
19.8	19.8	19.8	19.7	19.7	19.7
2.97	2.97	2.97	2.97	2.97	2.97
STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN
TBD	TBD	TBD	TBD	TBD	TBD
14.2	14.2	14.2	14.2	14.2	14.2
19	19	19	19	19	19
40.8	40.8	40.8	40.8	40.8	40.8
3	3	3	3	3	3
				Yes	
Yes	Yes	Yes	Yes	Yes	Yes

Table 3-1

Sample I.D.	#9	#10	#11
POLYMER TYPE	BHS	BHS 10% Lactam	BHS 10% Lactam
Feeder Setting	2.96	2.96	2.96
water on feeding zone	on	on	on
zone 1 Temp. (deg. c)	252	252	247
zone 2 Temp. (deg. c)	252	252	247
zone 3 Temp. (deg. c)	252	252	247
zone 4 Temp. (deg. c)	252	252	247
zone 5 Temp. (deg. c)	252	252	247
zone 6 Temp. (deg. c)	252	252	247
zone 7 Temp. (deg. c)	252	252	247
8 Connecting Plate Temp. (deg. c)	252	252	247
9 Block Temp. (deg. c)	252	252	247
10 Spin Pump Temp. (deg. c)	252	252	247
11 Top Cap (deg. c)	252	252	247
12 Spin Pack Temp. (deg. c)	252	252	247
Top Heated Sleeve Length (inches)	xxxx	xxxx	xxxx
Top Heated Sleeve Length (deg. c)	xxxx	xxxx	xxxx
Bottom Heated Sleeve Length (inches)	xxxx	xxxx	xxxx
Bottom Heated Sleeve Length (deg. c)	xxxx	xxxx	xxxx
Barrel Melt Temp (deg. c)	259	260	254
Melt Pump Inlet Pressure (psi)	40	90	250
Melt Pump Outlet Pressure (psi)	970	520	570
Extruder (rpm)	200	200	200
Spinneret: no. of holes / Shape	14 R	14 R	14 R
Spinneret: capillary diameter & depth	.024 x 0.072	.024 x 0.072	.024 x 0.072
Metering pump size (cc/rev)	1.16	1.16	1.16
Metering pump (rpm)	19.7	19.7	19.7
Thruput (lbs/hr)	2.97	2.97	2.97
Filter type	STD SCREEN	STD SCREEN	STD SCREEN
Monomer Exhaust Reading (inches water)	TBD	TBD	TBD
Quench air Flow rate (CF/M)	14.6	14.5	14.6
Quench air Temp (deg. c)	19.5	18.9	19.2
Quench air Humidity %	28.7	39.3	39.7
% Torque	42	27	29
Nitrogen in Hoper	3	3	3
Need: polymer chips moisture			
Need: Free fall samples for FAV, COOH			

Table 3-2

#12	#13	#14	#15	#16	#17
BHS 10% Lactam	BHS 10% Lactam	BHS 10% Lactam	BHS 10% Lactam	135	135 10% Lactam
2.96	2.96	2.96	2.96	2.96	2.96
on	on	on	on	on	on
242	237	232	227	260	260
242	237	232	227	260	260
242	237	232	227	260	260
242	237	232	227	260	260
242	237	232	227	260	260
242	237	232	227	260	260
242	237	232	227	260	260
242	237	232	227	260	260
242	237	232	227	260	260
242	237	232	227	260	260
242	237	232	227	260	260
242	237	232	227	260	260
242	237	232	227	260	260
xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
249	245	240	235	270	269
280	180	50	70	1200	300
610	740	790	840	1600	1040
200	200	200	200	200	200
14 R	14 R	14 R	14 R	14 R	14 R
.024 x 0.072	.024 x 0.072	.024 x 0.072	.024 x 0.072	.024 x 0.072	.024 x 0.072
1.16	1.16	1.16	1.16	1.16	1.16
19.7	19.7	19.7	19.7	19.7	19.7
2.97	2.97	2.97	2.97	2.97	2.97
STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN
TBD	TBD	TBD			
14.9	15	14.6	14.9	14.5	15.1
19.2	18.7	19	19.4	18.5	19.2
41.6	39.7	40.3	39.4	39.6	41.1
30	29	30	29	56	37
3	3	3	3	3	3

Table 4-1

Sample I.D.	#18	#19	#20
POLYMER TYPE	135 10% Lactam	135 10% Lactam	135 10% Lactam
Feeder Setting	2.96	2.96	2.96
water on feeding zone	on	on	on
zone 1 Temp. (deg. c)	255	250	245
zone 2 Temp. (deg. c)	255	250	245
zone 3 Temp. (deg. c)	255	250	245
zone 4 Temp. (deg. c)	255	250	245
zone 5 Temp. (deg. c)	255	250	245
zone 6 Temp. (deg. c)	255	250	245
zone 7 Temp. (deg. c)	255	250	245
8 Connecting Plate Temp. (deg. c)	255	250	245
9 Block Temp. (deg. c)	255	250	245
10 Spin Pump Temp. (deg. c)	255	250	245
11 Top Cap (deg. c)	255	250	245
12 Spin Pack Temp. (deg. c)	255	250	245
Top Heated Sleeve Length (inches)	xxxx	xxxx	xxxx
Top Heated Sleeve Length (deg. c)	xxxx	xxxx	xxxx
Bottom Heated Sleeve Length (inches)	xxxx	xxxx	xxxx
Bottom Heated Sleeve Length (deg. c)	xxxx	xxxx	xxxx
Barrel Melt Temp (deg. c)	264	259	253
Melt Pump Inlet Pressure (psi)	630	470	450
Melt Pump Outlet Pressure (psi)	1080	1140	1260
Extruder (rpm)	200	200	200
Spinneret: no. of holes / Shape	14 R	14 R	14 R
Spinneret: capillary diameter & depth	.024 x 0.072	.024 x 0.072	.024 x 0.072
Metering pump size (cc/rev)	1.16	1.16	1.16
Metering pump (rpm)	19.7	19.7	19.7
Thruput (lbs/hr)	2.97	2.97	2.97
Filter type	STD SCREEN	STD SCREEN	STD SCREEN
Monomer Exhaust Reading (inches water)	TBD	TBD	TBD
Quench air Flow rate (CF/M)	15.2	14.9	14.5
Quench air Temp (deg. c)	20.1	19.5	18.7
Quench air Humidity %	39.4	40.7	39.7
% Torque	39	38	40
Nitrogen in Hoper	3	3	3
Need: polymer chips moisture			
Need: Free fall samples for FAV, COOH			

Table 4-2

#21	#22	#23	#24	#25	#26
135 10% Lactam	135 10% Lactam	135 10% Lactam	135 10% Lactam	195	195 10% Lactam
2.96	2.96	2.96	2.96	2.96	2.96
on	on	on	on	on	on
240	235	230	225	300/289	290/273
240	235	230	225	300	290
240	235	230	225	300	290
240	235	230	225	300	290
240	235	230	225	300	290
240	235	230	225	300	290
240	235	230	225	300	290
240	235	230	225	300	290
240	235	230	225	300	290
240	235	230	225	300	290
240	235	230	225	300	290
240	235	230	225	300/300	290
xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
248	243	238	232	312	299
630	600	580	190	1480	1080
1280	1330	1480	1700	1290	790
200	200	200	200	200	200
14 R	14 R	14 R	14 R	14 R	14 R
.024 x 0.072	.024 x 0.072	.024 x 0.072	.024 x 0.072	.024 x 0.072	.024 x 0.072
1.16	1.16	1.16	1.16	1.16	1.16
19.7	19.7	19.7	19.7	19.7	19.7
2.97	2.97	2.97	2.97	2.97	2.97
STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN
TBD	TBD	TBD			
14.4	14.9	14	14.2	14.6	14.8
19	18.9	19.1	18.7	18.9	19.5
40.1	41.3	38.7	39.1	96.8	39.1
37	39	40	42	52	38
3	3	3	3	3	3

Table 5

Sample I.D.	#27	#28	#29	#30
POLYMER TYPE	195 10% Lactam	195 10% Lactam	195 10% Lactam	195 10% Lactam
Feeder Setting	2.96	2.96	2.96	2.96
water on feeding zone	on	on	on	on
zone 1 Temp. (deg. c)	285/270	280/288	275/263	270/258
zone 2 Temp. (deg. c)	285	280	275	270
zone 3 Temp. (deg. c)	285	280	275	270
zone 4 Temp. (deg. c)	285	280	275	270
zone 5 Temp. (deg. c)	285	280	275	270
zone 6 Temp. (deg. c)	285	280	275	270
zone 7 Temp. (deg. c)	285	280	275	270
8 Connecting Plate Temp. (deg. c)	285	280	275	270
9 Block Temp. (deg. c)	285	280	275	270
10 Spin Pump Temp. (deg. c)	285	280	275	270
11 Top Cap (deg. c)	285	280	275	270
12 Spin Pack Temp. (deg. c)	285	280	275	270
Top Heated Sleeve Length (inches)	xxxx	xxxx	xxxx	xxxx
Top Heated Sleeve Length (deg. c)	xxxx	xxxx	xxxx	xxxx
Bottom Heated Sleeve Length (inches)	xxxx	xxxx	xxxx	xxxx
Bottom Heated Sleeve Length (deg. c)	xxxx	xxxx	xxxx	xxxx
Barrel Melt Temp (deg. c)	296	289	284	279
Melt Pump Inlet Pressure (psi)	1250	50	860	1060
Melt Pump Outlet Pressure (psi)	860	890	970	1100
Extruder (rpm)	200	200	200	200
Spinneret: no. of holes / Shape	14 R	14 R	14 R	14 R
Spinneret: capillary diameter & depth	.024 x 0.072	.024 x 0.072	.024 x 0.072	.024 x 0.072
Metering pump size (cc/rev)	1.16	1.16	1.16	1.16
Metering pump (rpm)	19.7	19.7	19.7	19.7
Thruput (lbs/hr)	2.97	2.97	2.97	2.97
Filter type	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN
Monomer Exhaust Reading (inches water)	open	open	open	open
Quench air Flow rate (CF/M)	14.7	14.7	14.2	13.9
Quench air Temp (deg. c)	19.2	19.5	20	18.7
Quench air Humidity %	46.1	41.5	43.1	39.4
% Torque	41	28	37	41
Nitrogen in Hoper	3	3	3	3

Table 8-1

Sample I.D.	1-25	1-50	2-25	2-50	3-25	3-50
POLYMER TYPE	20 %MBM 70% Technic + 10% Lactam	20 %MBM 70% Technic + 10% Lactam	5 %MBM 85% Technic + 10% Lactam	5 %MBM 85% Technic + 10% Lactam	5 %MBM 70% Technic + 25% Lactam	5 %MBM 70% Technic + 25% Lactam
Polymer Type/Blend I.D.	Blend 1	Blend 1	Blend 2	Blend 2	Blend 3	Blend 3
SAMPLE START TIME						
SAMPLE FINISH TIME						
Run time (min)	45	45	45	45	45	45
Finish type	F-137	F-137	F-137	F-137	F-137	F-137
Kiss roll (rpm)	3	3.5	3	3.5	3	3.5
WPU%	5.16	3.28	5.16	3.28	5.16	3.28
Roll #1 Speed (m/Min.) RXT-2	3680	3680	3680	3680	3680	3680
Large Roll #4 Speed (m/Min.) RXT-1	3680	3680	3680	3680	3680	3680
Entangling						
jet type						
air to jet (psi)						
Winder grove roll: Speed (m/min.)	4453	4372	4210	4291	4331	4331
Winder drive roll: Speed (m/min.)	4048	4048	4048	4048	4048	4048
Undrawn Denier	25	50	25	50	25	50
Feeder Setting	1.5	3	1.5	3	1.5	3
water on feeding zone	on	on	on	on	on	on
zone 1 Temp. (deg. c)	215	215	215	215	215	215
zone 2 Temp. (deg. c)	215	215	215	215	215	215
zone 3 Temp. (deg. c)	215	215	215	215	215	215
zone 4 Temp. (deg. c)	215	215	215	215	215	215
zone 5 Temp. (deg. c)	215	215	215	215	215	215
zone 6 Temp. (deg. c)	210	210	210	210	210	210
zone 7 Temp. (deg. c)	210	210	210	210	210	210

Connecting Plate Temp. (deg. c)	213	213	213	213	213	213
Block Temp. (deg. c)	213	213	213	213	213	213
Spin Pump Temp. (deg. c)	215	215	215	215	215	215
Top Cap (deg. c)	215	215	215	215	215	215
Spin Pack Temp. (deg. c)	216	216	216	216	216	216
Barrel Melt Temp (deg. c)	217	217	217	217	217	217
Melt Pump Inlet Pressure (psi)	430	1490	350	480	700	1040
Melt Pump Outlet Pressure (psi)	190	490	190	440	0	20
Extruder (rpm)	220	220	220	220	220	220
Monomer Exhaust Reading (inches water)						
Spinneret: no. of holes / Shape	12 R	12 R	12 R	12 R	12 R	12 R
Spinneret: capillary diameter & depth	0.0177 x 0.061	0.0177 x 0.061	0.0177 x 0.061	0.0177 x 0.061	0.0177 x 0.061	0.0177 x 0.061
Metering pump size (cc/rev)	1.16	1.16	1.16	1.16	1.16	1.16
Metering pump (rpm)	9.5	18	9.5	18	9.5	18
Thruput (lbs/hr)	1.5	3	1.5	3	1.5	3
Filter type	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN
Quench air Flow rate (CF/M)	7.1	7.6	6.8	7.3	7.2	6.9
Quench air Temp (deg. c)	19.6	19.8	18.5	20.3	19.1	18.7
Quench air Humidity %	41.2	40.1	42.7	43.1	41.6	39.2
% Torque	18	33	17	27	13	19
Nitrogen in Hoper	3	3	3	3	3	3
Estimated lbs of Host + Binder Fiber (lb)	8.4	0	0	4	0.5	0

Table 8-2

Table 8-3

4-25	4-50	5-25	5-50	6-25	6-50	7-25	7-50
10 %MBM 75% Technic + 15% Lactam	10 %MBM 75% Technic + 15% Lactam	12.5 %MBM 70% Technic + 17.5% Lactam	12.5 %MBM 70% Technic + 17.5% Lactam	5 %MBM 77% Technic + 17.5% Lactam	5 %MBM 77% Technic + 17.5% Lactam	12.5 %MBM 77.5% Technic + 17.5% Lactam	12.5 %MBM 77.5% Technic + 17.5% Lactam
Blend 4	Blend 4	Blend 5	Blend 5	Blend 6	Blend 6	Blend 7	Blend 7
45	45	45	45	45	45	45	45
F-137	F-137	F-137	F-137	F-137	F-137	F-137	F-137
3	3.5	3	3.5	3	3.5	3	3.5
5.16	3.28	5.16	3.28	5.16	3.28	5.16	3.28
3680	3680	3680	3901	3901	3901	3901	3901
3680	3680	3680	3901	3901	3901	3901	3901
4291	4331	4331	4291	4291	4174	4291	4291
4048	4048	4048	4048	4048	4048	4048	4048
25	50	25	50	25	50	25	50
1.5	3	1.5	3	1.5	3	1.5	3
on	on	on	on	on	on	on	on
215	215	215	215	215	215	215	215
215	215	215	215	215	215	215	215
215	215	215	215	215	215	215	215
215	215	215	215	215	215	215	215
215	215	215	215	215	215	215	215
215	215	215	215	215	215	215	215
210	210	210	210	210	210	210	210
210	210	210	210	210	210	210	210

213	213	213	213	213	213	213	213	213	213
213	213	213	213	213	213	213	213	213	213
215	215	215	215	215	215	215	215	215	215
215	215	215	215	215	215	215	215	215	215
216	216	216	216	216	216	216	216	216	216
217	217	217	217	217	217	217	217	217	217
360	870	610	750	1100	1040	400	580		
90	250	80	120	30	190	210	430		
220	220	220	220	220	220	220	220		
12 R	12 R	12 R	12 R	12 R	12 R	12 R	12 R	12 R	12 R
0.0177 x 0.061	0.0177 x 0.061	0.0177 x 0.061	0.0177 x 0.061	0.0177 x 0.061	0.0177 x 0.061	0.0177 x 0.061	0.0177 x 0.061	0.0177 x 0.061	0.0177 x 0.061
1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
9.5	18	9.5	18	9.5	18	9.5	18	9.5	18
1.5	3	1.5	3	1.5	3	1.5	3	1.5	3
STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN
6.9	7.1	6.8	6.9	6.9	6.7	6.8	7.1		
19.5	18.9	20.1	18.5	19.1	19.7	18.9	19.1		
40.4	42	43.1	39.7	40.2	38.9	41.2	40.3		
14	20	18	17	26	20	18	21		
3	3	3	3	3	3	3	3		
10.6	6.8	6.2	1.6	1.6	1.6	3.5	18.4		

Table 8-4

Table 9

Sample ID	Run #	Melting Peaks						Total
		Onset	1st Tm	1st Area	1st Tm-	2nd Tm	2nd Area	Hf
		(C)	(C)	(J/g)	onset	(C)	(J/g)	(J/g)
1-25 70/20/10	1	159.5	176.7	52.6	17.2	213.1	18.5	71.1
	2	165.6	178.8	54.0	13.2	214.5	17.5	71.4
	Ave	162.6	177.8	53.3	15.2	213.8	18.0	71.3
2-25 85/5/10	1	161.9	172.4	56.6	10.5	209.2	4.7	61.2
	2	159.7	170.1	47.6	10.4	208.5	2.9	50.5
	Ave	160.8	171.3	52.1	10.5	208.9	3.8	55.9
3-25 70/5/25	1	137.2	165.4	65.0	28.2	202.3	3.7	68.7
	2	136.9	162.0	65.8	25.1	202.9	4.2	69.9
	Ave	137.1	163.7	65.4	26.7	202.6	3.9	69.3
4-25 75/10/15	1	156.1	176.1	53.1	20.0	212.9	9.5	62.5
	2	151.9	171.9	57.0	20.0	210.8	12.6	69.6
	Ave	154.0	174.0	55.0	20.0	211.9	11.0	66.1
5-25 70/12.5/17.5	1	156.5	175.5	55.1	19.0	213.4	19.7	74.8
	2	157.4	174.9	52.1	17.5	212.6	19.1	71.2
	Ave	157.0	175.2	53.6	18.3	213.0	19.4	73.0
6-25 77.5/12.5/17.5	1	150.7	167.4	56.3	16.7	205.7	4.7	60.9
	2	142.8	169.2	71.9	26.4	209.0	4.1	76.0
	Ave	146.8	168.3	64.1	21.6	207.4	4.4	68.4
7-25 77.5/12.5/10	1	165.6	177.2	43.0	11.6	213.8	17.2	60.2
	2	165.1	177.0	49.5	11.9	213.9	18.5	68.0
	Ave	165.4	177.1	46.2	11.8	213.9	17.9	64.1
1-50 70/20/10	1	169.2	188.4	39.1	19.2	217.4	33.0	72.1
	2	175.0	189.5	44.4	14.5	217.7	32.4	76.8
	Ave	172.1	189.0	41.8	16.9	217.6	32.7	74.4
2-50 85/5/10	1	163.7	173.7	56.5	10.0	211.2	5.9	62.4
	2	163.8	172.0	55.5	8.2	210.1	5.9	61.4
	Ave	163.8	172.9	56.0	9.1	210.7	5.9	61.9
3-50 70/5/25	1	127.0	160.2	44.6	33.2	201.2	29.7	74.4
	2	127.0	162.7	49.9	35.7	202.6	37.5	87.4
	Ave	127.0	161.5	47.2	34.5	201.9	33.6	80.9
4-50 75/10/15	1	157.9	174.3	42.4	16.4	212.1	15.1	57.5
	2	157.0	173.7	54.2	16.7	212.7	17.5	71.7
	Ave	157.5	174.0	48.3	16.6	212.4	16.3	64.6
5-50 70/12.5/17.5	1	139.3	174.4	67.8	35.1	211.6	17.1	84.9
	2	142.4	173.7	62.2	31.3	212.6	16.6	78.7
	Ave	140.9	174.1	65.0	33.2	212.1	16.8	81.8
6-50 77.5/12.5/17.5	1	152.5	169.6	50.3	17.1	206.8	6.2	56.5
	2	153.7	173.4	64.9	19.7	211.9	6.1	71.0
	Ave	153.1	171.5	57.6	18.4	209.4	6.2	63.7
7-50 77.5/12.5/10	1	167.8	176.8	40.5	9.0	214.2	14.6	55.1
	2	164.3	177.0	54.3	12.7	214.3	17.4	71.7
	Ave	166.1	176.9	47.4	10.9	214.3	16.0	63.4

Table 11-1

Sample I.D.		10	1
POLYMER TYPE	MBM/technic & lactam blends	Blend #10	Blend #1
Feeder Setting	1.13	2.96	2.96
water on feeding zone		on	on
zone 1 Temp. (deg. c)	215	220	215
zone 2 Temp. (deg. c)	215	220	215
zone 3 Temp. (deg. c)	215	220	215
zone 4 Temp. (deg. c)	215	220	215
zone 5 Temp. (deg. c)	215	220	215
zone 6 Temp. (deg. c)	210	220	210
zone 7 Temp. (deg. c)	210	220	210
8 Connecting Plate Temp. (deg. c)	213	220	213
9 Block Temp. (deg. c)	213	220	213
10 Spin Pump Temp. (deg. c)	215	220	215
11 Top Cap (deg. c)	215	220	215
12 Spin Pack Temp. (deg. c)	216	220	216
Barrel Melt Temp (deg. c)		225	218
Melt Pump Inlet Pressure (psi)		220	850
Melt Pump Outlet Pressure (psi)		600	330
Extruder (rpm)	200	200	200
Monomer Exhaust Reading (inches water)			
Spinneret: no. of holes / Shape		6R	6R
Spinneret: capillary diameter & depth		.01778 x .061	.01778 x .061
Metering pump size (cc/rev)		1.16	1.16
Metering pump (rpm)		7.5	7.5
Thruput (lbs/hr)		1.13	1.13
Filter type		STD SCREEN	STD SCREEN
Quench air Flow rate (CF/M)		7.1	7.2
Quench air Temp (deg. c)		20.1	19.9
Quench air Humidity %		54.5	52.2
% Torque		21	22
Nitrogen in Hoper		3	3
Need: polymer chips moisture		yes	

Table 11-2

2	3	4	5	6	7
Blend #2	Blend #3	Blend #4	Blend #5	Blend #6	Blend #7
2.96	2.96	2.96	2.96	2.96	2.96
on	on	on	on	on	on
215	215	215	215	215	215
215	215	215	215	215	215
215	215	215	215	215	215
215	215	215	215	215	215
215	215	215	215	215	215
210	210	210	210	210	210
210	210	210	210	210	210
213	213	213	213	213	213
213	213	213	213	213	213
215	215	215	215	215	215
215	215	215	215	215	215
216	216	216	216	216	216
218	218	218	218	218	218
1210	670	630	910	1340	920
460	520	520	420	560	430
200	200	200	200	200	200
6R	6R	6R	6R	6R	6R
.01778 x .061	.01778 x .061	.01778 x .061	.01778 x .061	.01778 x .061	.01778 x .061
1.16	1.16	1.16	1.16	1.16	1.16
7.5	7.5	7.5	7.5	7.5	7.5
1.13	1.13	1.13	1.13	1.13	1.13
STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN
7.4	7.3	7.5	7.4	7.2	7
18.3	18.3	19.3	18.8	18.5	18.4
45.2	45.2	52.5	49.7	50.1	52.4
27	27	25	22	29	22
3	3	3	3	3	3

Table 11-3

8	9	10	11	12
Blend #8	Blend #9	Blend #10	Blend #11	Blend #12
2.96	2.96	2.96	2.96	2.96
on	on	on	on	on
215	215	215	223	258
215	215	215	223	258
215	215	215	223	258
215	215	215	223	258
215	215	215	223	258
210	210	210	218	258
210	210	210	218	258
213	213	213	221	258
213	213	213	220	258
215	215	215	222	258
215	215	215	222	258
216	216	216	226/223	258
218	217	217	225	264
450	760	470	1400	680
460	470	620	390	570
200	200	200	200	200
6R	6R	6R	6R	6R
.01778 x .061	.01778 x .061	.01778 x .061	.01778 x .061	.01778 x .061
1.16	1.16	1.16	1.16	1.16
7.5	7.5	7.5	7.5	7.5
1.13	1.13	1.13	1.13	1.13
STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN	STD SCREEN
7.4	6.9	7	7.1	7.1
18.5	19.9	18.9	18.2	18.5
53.6	51	39.4	52.1	36.8
21	22	22	28	23
3	3	3	3	3

Table 12-1	Table 12-2	Table 12-3	Table 12-4	Table 12-5
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Table 12

Table 20-1	Table 20-2
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Table 20

Table 13-1	Table 13-2
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Table 13

Table 16-1	Table 16-2
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Table 16

Table 24-1	Table 24-2
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Table 24

Table 12-1

Sample I.D.	Blend 10-1	Blend 10-2	Blend 10-3	Blend 1-1	Blend 1-2	Blend 1-3	Blend 2-1	Blend 2-2
POLYMER TYPE	Nylon Blend							
SAMPLE START TIME	10	10	10	1	1	1	2	2
SAMPLE FINISH TIME	13:25	14:25	15:15	8:30	8:36	9:20	10:19	11:06
Run time (min)	14:20	15:10	15:40	8:34	9:16	10:05	11:04	11:22
Finish type	45	45	25	4	45	45	45	16
Kiss roll (rpm)	F-137-10	F-137-10	F-137-1	F-137-1	F-137-1	F-137-1	F-137-1	F-137-10
Godets:	3.0	3.0	4.0	3.4	3.4	3.8	3.8	3.8
SMALL Roll #1 Speed (m/Min.)			9.5%					
SMALL Roll #2 Speed (m/Min.)	RXT-2	4090	4090	4090	4090	4090	4090	4090
LARGE Roll #3 Speed (m/Min.)								
LARGE Roll #4 Speed (m/Min.)	RXT-1	4090	4090	4090	4090	4090	4090	4090
Entangling								
jet type								
air to jet (psi)								
Winder grove roll: Speed (m/min.)	4499	4499	4499	4499	4499	4499	4499	4499
Winder drive roll: Speed (m/min.)	4090	4090	4090	4090	4090	4090	4090	4090
Undrawn Denier	20.0			20.0	20.0	20.0		
Need: undrawn yarn Denier, instron, free fall FAV (after each run set)								
Submit free fall and polymer to FAV								
Monomer Exhaust Reading (inches water)								

Table 12-2

[illegible]

Table 12-3

[illegible]

Table 12-4

[illegible]

Table 12-5

Blend 8-5	Blend 8-6	Comments
8	8	
10:45	10:55	Hard to string up- lowered RxT-2 #1 roll to 2090 m/min. then raised back up on winder.
10:51	11:02	
6	7	
F-137-10	F-137-10	
3.67	3.67	
4090	4090	
4499	4499	
4090	4090	

Table 13-1

[illegible]

Table 13-2

[illegible]

Table 14

Cycle Type:		1st Heat Cycle						
Scan Conditions		300	Rate (C/min):		20	Hold (min):		
Sample ID	Run #	Melting Peaks						
		Onset	1st Tm	Hf 1	Onset 2	2nd Tm	3rd Tm	Hf 2
		(C)	(C)	(J/g)	(C)	(C)	(C)	(J/g)
1-2	1	137.2	148.5	3.5	178.6	182.3	215.3	52.2
	2	137.9	149.2	3.7	178.8	182.3	215.3	52.5
	Ave	137.6	148.9	3.6	178.7	182.3	215.3	52.3
2-1	1	127.3	139.0	3.7	177.7	180.8	214.3	58.3
	2	125.8	137.3	3.9	177.8	181.1	215.4	58.8
	Ave	126.6	138.2	3.8	177.8	181.0	214.9	58.6
3-1	1	138.7	148.8	3.2	176.0	178.2	212.9	50.1
	2	138.3	148.4	3.2	175.9	178.0	213.5	51.5
	Ave	138.5	148.6	3.2	176.0	178.1	213.2	50.8
4-2	1	135.3	146.9	3.9	179.1	183.1	215.7	56.3
	2	137.2	147.6	4.0	179.1	183.0	215.6	57.2
	Ave	136.3	147.3	3.9	179.1	183.1	215.7	56.8
5-2	1	131.8	143.2	4.0	178.6	182.0	215.3	59.1
	2	129.1	141.1	4.2	179.9	184.9	216.2	57.5
	Ave	130.5	142.2	4.1	179.3	183.5	215.8	58.3
6-1	1	112.0	126.1	5.2	180.4	187.6	217.1	63.0
	2	110.6	124.4	4.8	179.9	187.4	217.1	67.0
	Ave	111.3	125.3	5.0	180.2	187.5	217.1	65.0
7-4	1	131.2	142.8	4.0	180.6	187.5	216.9	63.3
	2	132.3	143.8	3.9	180.9	187.6	216.7	59.7
	Ave	131.8	143.3	4.0	180.8	187.6	216.8	61.5
8-1	1	122.6	134.6	3.9	178.9	183.4	216.1	63.6
	2	128.9	140.1	3.9	179.5	183.7	215.7	57.1
	Ave	125.8	137.4	3.9	179.2	183.6	215.9	60.3
10-1	1	135.6	146.0	3.3	172.2	174.3		49.9
	2	131.5	142.5	3.3	172.3	174.1		54.3
	Ave	133.6	144.3	3.3	172.3	174.2		52.1
11-1	1	122.6	135.2	3.8	171.3	173.0		60.1
	2	116.2	128.1	3.8	171.1	173.4		63.9
	Ave	119.4	131.7	3.8	171.2	173.2		62.0
8B-1	1	118.9	133.6	4.4	178.5	184.0	215.5	62.1
	2	118.7	132.7	4.2	179.0	184.1	215.9	61.9
	Ave	118.8	133.2	4.3	178.8	184.1	215.7	62.0
9-1	1	125.6	138.3	4.6	179.7	188.4	216.7	60.5
	2	123.8	137.2	4.2	179.8	188.4	216.6	62.3
	Ave	124.7	137.8	4.4	179.8	188.4	216.7	61.4
9B-1	1	122.1	134.5	4.0	178.2	181.9	215.7	61.7
	2	121.5	135.0	4.3	178.4	182.1	214.7	60.2
	Ave	121.8	134.8	4.2	178.3	182.0	215.2	61.0
12-1 MBM	1	114.9	132.3	5.1	210.6	214.3	220.7	73.4
	2	118.6	134.9	5.6	211.0	214.1	220.8	71.6
	Ave	116.8	133.6	5.3	210.8	214.2	220.8	72.5

Table 16-1

		RXT-2 Extrusion	
Sample I.D.		9B	9C
POLYMER TYPE	MB/technic & lactam blends	Blend #9	Blend #9
water on feeding zone		on	on
zone 1 Temp. (deg. c)		220	230
zone 2 Temp. (deg. c)		220	230
zone 3 Temp. (deg. c)		220	230
zone 4 Temp. (deg. c)		220	230
zone 5 Temp. (deg. c)		220	230
zone 6 Temp. (deg. c)		220	230
zone 7 Temp. (deg. c)		220	230
8 Connecting Plate Temp. (deg. c)		220	230
9 Block Temp. (deg. c)		220	230
10 Spin Pump Temp. (deg. c)		220	230
11 Top Cap (deg. c)		220	230
12 Spin Pack Temp. (deg. c)		220	230
Barrel Melt Temp (deg. c)		225	235
Melt Pump Inlet Pressure (psi)			
Melt Pump Outlet Pressure (psi)			
Extruder (rpm)		200	200
Monomer Exhaust Reading (inches water)			
Spinneret: no. of holes / Shape		6R	6R
Spinneret: capillary diameter & depth		.01778x.061	.01778x.061
Metering pump size (cc/rev)		1.16	1.16
Metering pump (rpm)		7.5	7.5
Thruput (lbs/hr)		1.13	1.13
Filter type		STD SCREEN	STD SCREEN
Quench air Flow rate (CF/M)		7.1	7.1
Quench air Temp (deg. c)		20.1	20.1
Quench air Humidity %		54.5	54.5
% Torque		21	21
Nitrogen in Hoper		3	3
Need: polymer chips moisture		No	

Table 16-2

9D	9E	9F
Blend #9	Blend #9	Blend #9
on	on	on
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
245	255	265
200	200	200
6R	6R	6R
.01778x.061	.01778x.061	.01778x.061
1.16	1.16	1.16
7.5	7.5	7.5
1.13	1.13	1.13
STD SCREEN	STD SCREEN	STD SCREEN
7.1	7.1	7.1
20.1	20.1	20.1
54.5	54.5	54.5
21	21	21
3	3	3

Table 17

RXT-1 Take-Up						
Sample I.D.		9B	9C	9D	9E	9F
POLYMER TYPE	Nylon Blend	9	9	9	9	9
SAMPLE START TIME						
SAMPLE FINISH TIME						
Run time (min)		5-10 min	5-10 min	5-10 min	5-10 min	5-10 min
Finish type		F-137-10	F-137-10	F-137-10	F-137-10	F-137-10
Kiss roll (rpm)		3.7	3.7	3.7	3.7	3.7
Godets:						
SMALL Roll #1 Speed (m/Min.)	RXT-2	4090	4090	4090	4090	4090
SMALL Roll #2 Speed (m/Min.)						
LARGE Roll #3 Speed (m/Min.)						
LARGE Roll #4 Speed (m/Min.)	RXT-1	4090	4090	4090	4090	4090
Entangling						
jet type						
air to jet (psi)						
Winder grove roll: Speed (m/min.)		4499	4499	4499	4499	4499
Winder drive roll: Speed (m/min.)		4090	4090	4090	4090	4090
Undrawn Denier		20.0	20.0	20.0	20.0	20.0

Table 18

Cycle Type:		1st Heat Cycle						
Scan Conditions		300	Rate (C/min):		20	Hold (min):		
Sample ID	Run #	Melting Peaks						
		Onset 1 (C)	1st Tm (C)	ΔH_f 1 (J/g)	Onset 2 (C)	2nd Tm (C)	3rd Tm (C)	ΔH_f 2 (J/g)
9 B	1	119.1	132.4	4.7	180.4	190.4	217.1	63.8
	2	118.1	132.3	5.5	180.7	190.8	217.6	66.5
	Ave	118.6	132.4	5.1	180.6	190.6	217.4	65.2
9 C	1	128.8	141.0	4.0	180.4	186.2	216.1	62.7
	2	128.2	140.5	4.6	180.3	186.4	216.6	61.6
	Ave	128.5	140.8	4.3	180.4	186.3	216.4	62.2
9 D	1	129.0	141.8	4.7	181.1	189.2	216.8	62.5
	2	129.2	141.2	4.6	181.0	189.2	216.8	63.2
	Ave	129.1	141.5	4.6	181.1	189.2	216.8	62.8
9 E	1	132.6	145.2	4.8	181.1	189.6	215.9	62.3
	2	134.4	146.2	4.4	182.0	189.9	216.1	61.6
	Ave	133.5	145.7	4.6	181.6	189.8	216.0	61.9
9 F	1	137.2	148.3	4.4	180.9	187.0	213.8	59.3
	2	136.7	148.6	4.2	180.8	187.0	213.7	58.3
	Ave	137.0	148.5	4.3	180.9	187.0	213.8	58.8
9 B As Received	1				177.9	190.1	217.3	63.9
	2				175.5	189.4	217.4	64.8
	Ave				176.7	189.8	217.4	64.3
9 F As Received	1				177.4	186.4	213.8	61.6
	2				175.7	185.5	213.1	66.3
	Ave				176.6	186.0	213.5	63.9

Table 20-1

		RXT-2 Extrusion	
Sample I.D.		9B	9C
POLYMER TYPE	MB/technic & lactam blends	Blend #9	Blend #9
water on feeding zone		on	on
zone 1 Temp. (deg. c)		220	230
zone 2 Temp. (deg. c)		220	230
zone 3 Temp. (deg. c)		220	230
zone 4 Temp. (deg. c)		220	230
zone 5 Temp. (deg. c)		220	230
zone 6 Temp. (deg. c)		220	230
zone 7 Temp. (deg. c)		220	230
8 Connecting Plate Temp. (deg. c)		220	230
9 Block Temp. (deg. c)		220	230
10 Spin Pump Temp. (deg. c)		220	230
11 Top Cap (deg. c)		220	230
12 Spin Pack Temp. (deg. c)		220	230
Barrel Melt Temp (deg. c)		225	235
Melt Pump Inlet Pressure (psi)			
Melt Pump Outlet Pressure (psi)			
Extruder (rpm)		200	200
Monomer Exhaust Reading (inches water)			
Spinneret: no. of holes / Shape		6R	6R
Spinneret: capillary diameter & depth		.01778x.061	.01778x.061
Metering pump size (cc/rev)		1.16	1.16
Metering pump (rpm)		7.5	7.5
Thruput (lbs/hr)		1.13	1.13
Filter type		STD SCREEN	STD SCREEN
Quench air Flow rate (CF/M)		7.1	7.1
Quench air Temp (deg. c)		20.1	20.1
Quench air Humidity %		54.5	54.5
% Torque		21	21
Nitrogen in Hoper		3	3
Need: polymer chips moisture		No	

Table 20-2

9D	9E	9F
Blend #9	Blend #9	Blend #9
on	on	on
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
240	250	260
245	255	265
200	200	200
6R	6R	6R
.01778x.061	.01778x.061	.01778x.061
1.16	1.16	1.16
7.5	7.5	7.5
1.13	1.13	1.13
STD SCREEN	STD SCREEN	STD SCREEN
7.1	7.1	7.1
20.1	20.1	20.1
54.5	54.5	54.5
21	21	21
3	3	3

Table 21

RXT-1 Take-Up						
Sample I.D.		9B	9C	9D	9E	9F
POLYMER TYPE	Nylon Blend	9	9	9	9	9
SAMPLE START TIME						
SAMPLE FINISH TIME						
Run time (min)		5-10 min	5-10 min	5-10 min	5-10 min	5-10 min
Finish type		F-137-10	F-137-10	F-137-10	F-137-10	F-137-10
Kiss roll (rpm)		3.7	3.7	3.7	3.7	3.7
Godets:						
SMALL Roll #1 Speed (m/Min.)	RXT-2	4090	4090	4090	4090	4090
SMALL Roll #2 Speed (m/Min.)						
LARGE Roll #3 Speed (m/Min.)						
LARGE Roll #4 Speed (m/Min.)	RXT-1	4090	4090	4090	4090	4090
Entangling						
jet type						
air to jet (psi)						
Winder grove roll: Speed (m/min.)		4499	4499	4499	4499	4499
Winder drive roll: Speed (m/min.)		4090	4090	4090	4090	4090
Undrawn Denier		20.0	20.0	20.0	20.0	20.0

Table 22

Cycle Type:		1ST Heat Cycle			
Scan Conditions		20	Hold (min):		na
Sample ID	Run #	Melting Peaks			
		Onset	1st Tm	2nd Tm	ΔHf
		(C)	(C)	(C)	(J/g)
1A	1	177.4	184.6	212.6	53.0
	2	177.6	184.7	213.1	55.0
	Ave	177.5	184.7	212.9	54.0
1B	1	178.3	185.6	214.9	50.9
	2	177.7	185.4	214.2	52.9
	Ave	178.0	185.5	214.6	51.9
1C	1	178.2	185.7	215.5	54.7
	2	178.2	185.7	215.7	53.1
	Ave	178.2	185.7	215.6	53.9
2	1	173.7	184.6	214.3	60.0
	2	175.5	185.0	214.5	53.1
	Ave	174.6	184.8	214.4	56.5
3	1	175.5	182.8	214.1	55.2
	2	174.2	183.2	213.3	57.5
	Ave	174.9	183.2	213.7	56.4
4	1	176.9	185.1	214.4	55.6
	2	177.0	185.2	213.9	54.7
	Ave	177.0	185.2	214.2	55.2

Table 24-1

		RXT-2 Extrusion	
Sample I.D.		1	2
POLYMER TYPE	MB/technic & lactam blends	Blend #1	Blend #2
water on feeding zone		on	on
zone 1 Temp. (deg. c)		253	253
zone 2 Temp. (deg. c)		253	253
zone 3 Temp. (deg. c)		253	253
zone 4 Temp. (deg. c)		253	253
zone 5 Temp. (deg. c)		253	253
zone 6 Temp. (deg. c)		248	248
zone 7 Temp. (deg. c)		248	248
8 Connecting Plate Temp. (deg. c)		251	251
9 Block Temp. (deg. c)		250	250
10 Spin Pump Temp. (deg. c)		252	252
11 Top Cap (deg. c)		252	252
12 Spin Pack Temp. (deg. c)		253	253
Barrel Melt Temp (deg. c)		255	255
Melt Pump Inlet Pressure (psi)			
Melt Pump Outlet Pressure (psi)			
Extruder (rpm)		200	200
Monomer Exhaust Reading (inches water)			
Spinneret: no. of holes / Shape		6R	6R
Spinneret: capillary diameter & depth		.01778x.061	.01778x.061
Metering pump size (cc/rev)		1.16	1.16
Metering pump (rpm)		7.5	7.5
Thruput (lbs/hr)		1.13	1.13
Filter type		STD SCREEN	STD SCREEN
Quench air Flow rate (CF/M)		7.1	7.1
Quench air Temp (deg. c)		20.1	20.1
Quench air Humidity %		54.5	54.5
% Torque		21	21
Nitrogen in Hoper		3	3
Need: polymer chips moisture		No	

Table 24-2

3	4	5
Blend #3	Blend #4	Blend #5
on	on	on
253	253	253
253	253	253
253	253	253
253	253	253
253	253	253
248	248	248
248	248	248
251	251	251
250	250	250
252	252	252
252	252	252
253	253	253
255	255	255
200	200	200
6R	6R	6R
.01778x.061	.01778x.061	.01778x.061
1.16	1.16	1.16
7.5	7.5	7.5
1.13	1.13	1.13
STD SCREEN	STD SCREEN	STD SCREEN
7.1	7.1	7.1
20.1	20.1	20.1
54.5	54.5	54.5
21	21	21
3	3	3

Table 25

RXT-1 Take-Up						
Sample I.D.	1	2	3	4	5	
POLYMER TYPE	Nylon Blend	2	3	4	5	
SAMPLE START TIME						
SAMPLE FINISH TIME						
Run time (min)	5-10 min	5-10 min	5-10 min	5-10 min	5-10 min	
Finish type	F-137-10	F-137-10	F-137-10	F-137-10	F-137-10	
Kiss roll (rpm)	3.7	3.7	3.7	3.7	3.7	
Godets:						
SMALL Roll #1 Speed (m/Min.)	RXT-2	4090	4090	4090	4090	
SMALL Roll #2 Speed (m/Min.)						
LARGE Roll #3 Speed (m/Min.)						
LARGE Roll #4 Speed (m/Min.)	RXT-1	4090	4090	4090	4090	
Entangling						
jet type						
air to jet (psi)						
Winder grove roll: Speed (m/min.)	4499	4499	4499	4499	4499	
Winder drive roll: Speed (m/min.)	4090	4090	4090	4090	4090	
Undrawn Denier	20.0	20.0	20.0	20.0	20.0	
Need: undrawn yarn Denier, instron, free fall FAV (after each run set) submit free fall and polymer for FAV						
Monomer Exhaust inches water						

Table 26

Cycle Type:		1ST Heat Cycle			
Scan Conditions		20	Hold (min):		na
Sample ID	Run #	Melting Peaks			
		Onset	1st Tm	2nd Tm	ΔHf
		(C)	(C)	(C)	(J/g)
#1	1	179.4	190.9	216.3	59.7
	2	179.3	190.5	216.0	60.2
	Ave	179.4	190.7	216.2	60.0
#2	1	180.6	193.1	216.5	61.8
	2	181.1	192.8	216.5	60.5
	Ave	180.9	193.0	216.5	61.2
#3	1	185.1	199.5	218.1	62.9
	2	184.1	199.0	218.1	66.3
	Ave	184.6	199.3	218.1	64.6
#4	1	201.9		219.7	67.6
	2	202.0		219.2	68.5
	Ave	202.0		219.5	68.1
#5	1	185.8	199.5	218.0	61.5
	2	186.3	200.0	218.3	61.1
	Ave	186.1	199.8	218.2	61.3
#10	1	170.5		172.1	51.8
	2	170.5		172.3	49.9
	Ave	170.5		172.2	50.8